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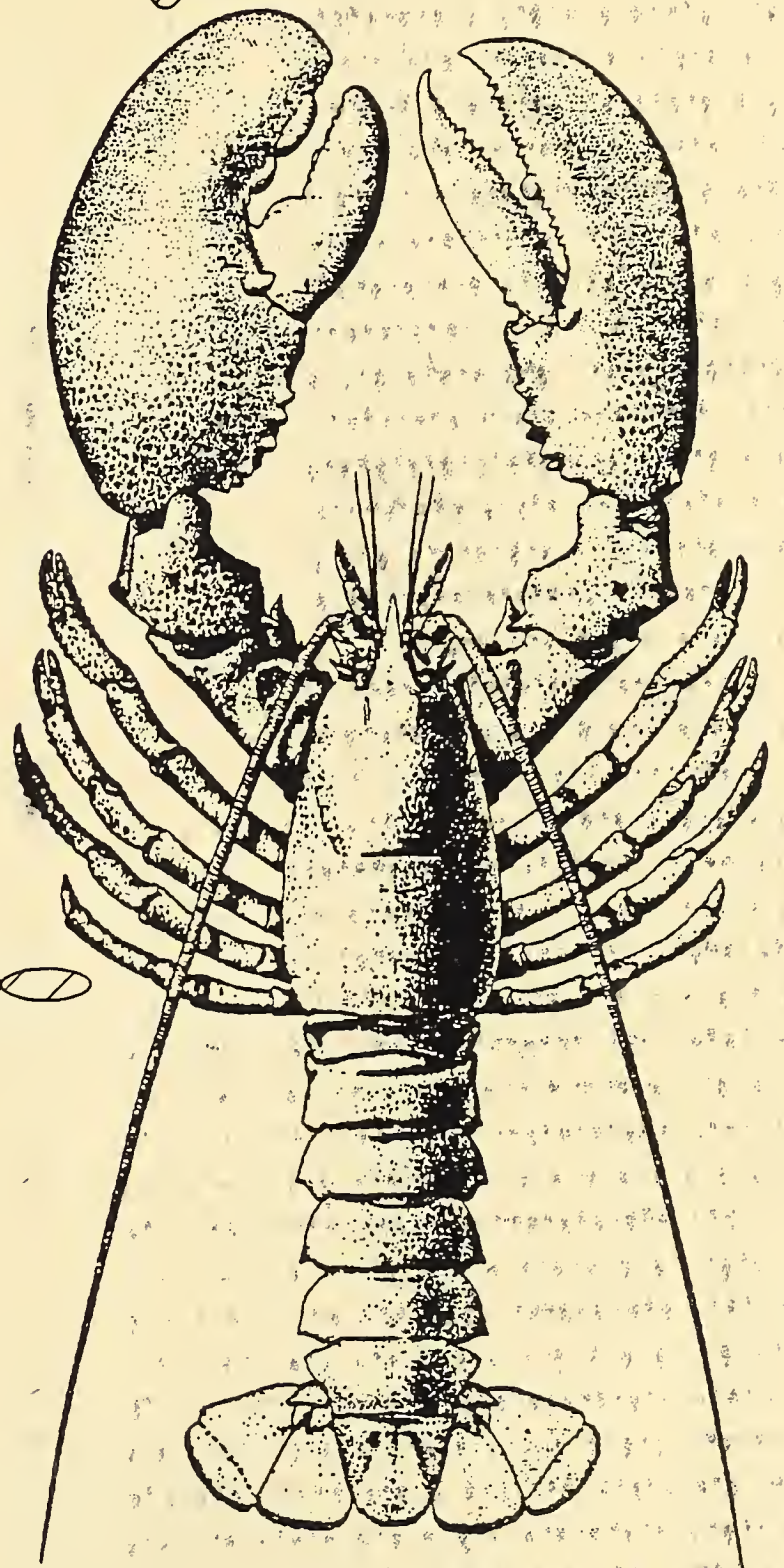
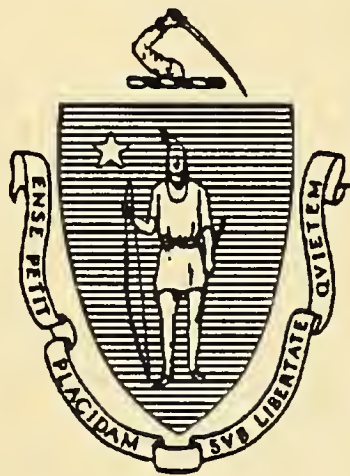
University of
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L I B R A R Y

1990

Massachusetts
Lobster Fishery
Statistics

Thomas B. Hoopes



MASSACHUSETTS
DIVISION OF MARINE FISHERIES

**1990
MASSACHUSETTS
LOBSTER FISHERY
STATISTICS**

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**The Commonwealth of Massachusetts
Executive Office of Environmental Affairs
Susan F. Tierney, Secretary
Department of Fisheries, Wildlife and Environmental Law Enforcement
John C. Phillips, Commissioner
Division of Marine Fisheries
Philip G. Coates, Director**

INTRODUCTION

The commercial lobster fishery of Massachusetts is, economically, the most important fishery conducted within the territorial waters of the Commonwealth. The overall economic importance of the fishery both in New England and, in recent years, the Mid-Atlantic states, has focused the attention of Federal, Regional and State fishery managers on this species. Initially, in an attempt to standardize management of the fishery, the Federal and State Governments developed an overall lobster fishery management plan under the auspices of the State-Federal Partnership Program. However, with the passage of the Fisheries Management and Conservation Act, the New England Fisheries Management Council, in cooperation with the Mid-Atlantic Council, has developed and implemented a management plan for the entire east coast lobster fishery. The basis and success of any such plan is an accurate statistical data base. The Commonwealth of Massachusetts, with joint funding from the National Marine Fisheries Service, has been collecting annual reports from licensed lobster fishermen for many years. Historically, the data collected was used primarily for descriptive and informational purposes, and occasionally for management. However, with the recent emphasis on Federal management, these data take on added importance in terms of providing the respective management agencies with adequate information to insure that the interests of Massachusetts' lobstermen are protected.

During the period 1975 - 1980, the number of coastal commercial lobster permits was limited, by law, to 1300, with an additional ten percent issued to proven hardship cases. In 1981, a statutory change provided for the establishment of a permanent waiting list from which 100 new permits were issued. In addition, 30 special additional permits were awarded to full time commercial fishermen who met certain criteria. In subsequent years 80 list permits and 20 special additional permits have been issued until 1988, when the issuance of new coastal permits was suspended. Permits which are not renewed are retired.

This report is the twenty - fourth annual publication of data summarized from catch reports submitted by licensed lobster fishermen. Data were presented in a standardized format through 1979. In 1980, presentation was changed to reflect a more thorough collection and evaluation of the submitted information. This publication represents the fifth year in which data processing and evaluation were completely computerized. It is the first year in which data is presented to conform to the National Marine Fisheries Service statistical reporting areas. This report does not, however, cover the scope of the Project's existing database and computational capability. Requests for expanded information, or questions concerning this publication, should be made to the Division's Statistics Project in Salem, MA: (508) 745-3113.

This report has been prepared by personnel from the Division of Marine Fisheries Statistics and Data Processing Project, funded jointly by the Commonwealth and the National Marine Fisheries Service under the Commercial Fisheries Research and Development Act (Public Law 88-309). The preparation of this report would not have been possible without the cooperation of licensed lobstermen who provided the information on their annual reports. Special thanks go to Ann Spires who continues, year after year, to interpret and keypunch, with special care and accuracy, the type of reports that fishermen are likely to fill out, and to Gerald Nash for his help in Oracle development and report generation. Thanks also goes to Charlie Anderson, who heads up the project, for his continual help with system development, upgrades and suggestions concerning this publication. These three people have as integral a

part in this process as I do, and without them this publication would not be possible.

SOURCE OF DATA

No person may fish for or take lobster in coastal waters or land lobster in the Commonwealth without a permit issued by the Director of the Division of Marine Fisheries (Chapter 130, Mass. G.L., Section 38). Chapter 130, Mass. G.L., Section 33, requires any person so licensed to file an annual report of their catch by January 31 for the preceding calendar year. In 1980, a dual reporting system was established. Commercial lobstermen (coastal, offshore and seasonal(student)) received a detailed catch report form with their license renewal application. This report requests the following information: method of fishing; number and type of gear used; effort data (set-over days, number of trips per month, etc.); pounds of lobster caught; areas fished; principal ports of landing; and information relative to the vessels and traps used in the fishery. Recreational fishermen are asked to report on their license renewal application form the number of lobsters taken during the previous year and the maximum number of traps fished.

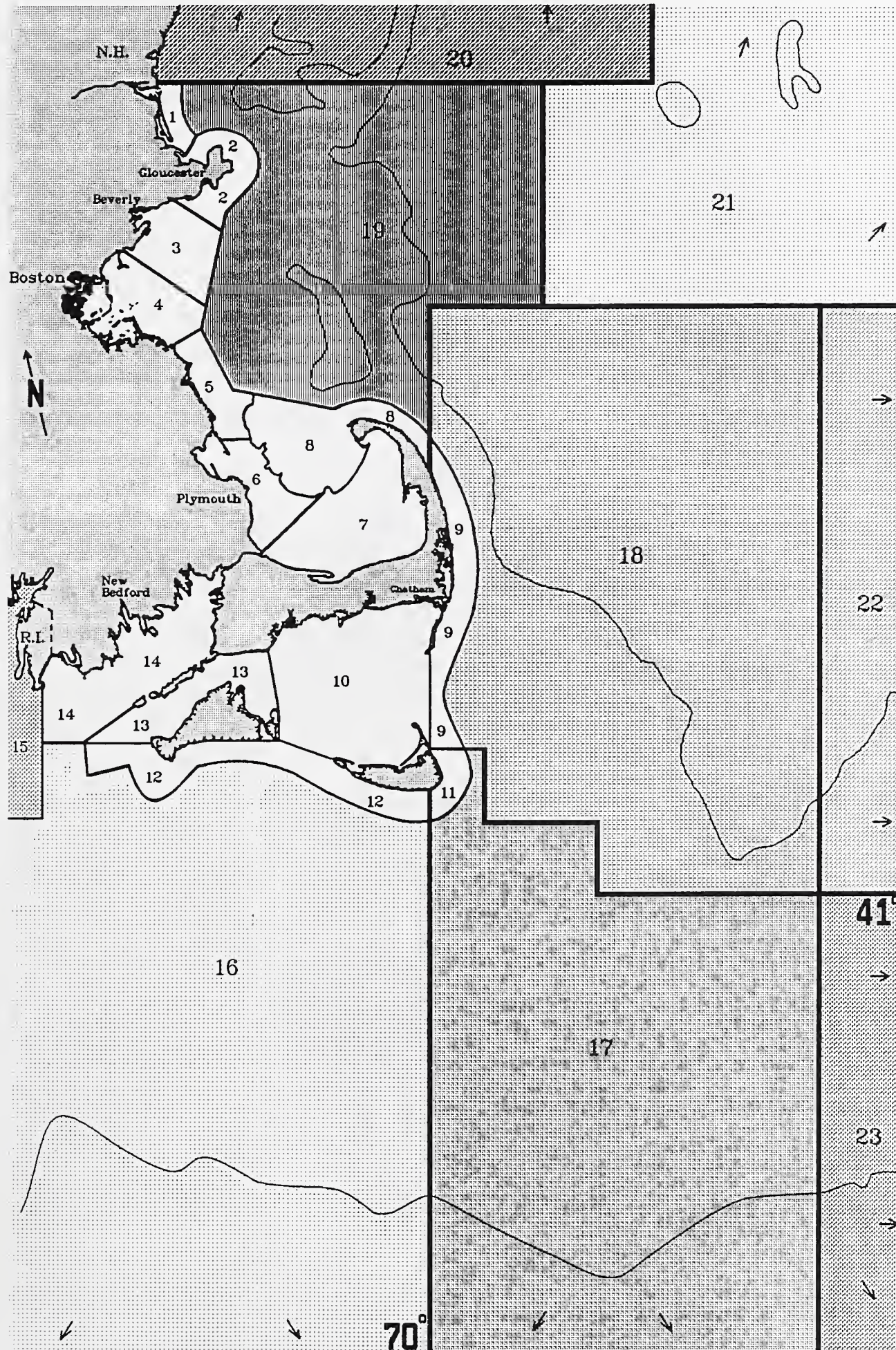
Project personnel sort, edit, tabulate and interpret data from all reports received. Data presented in this publication are based on catch reports actually received as of July 23, 1991, and are not expanded to represent all of the permits issued in 1990.

EXPLANATION OF TABLES

All data presented in this publication are broken down into two basic categories: the first is "territorial" which represents data pertaining to all lobster activity taking place within the territorial waters (3 mile line) of the Commonwealth (Areas 1-14 on Figure 1A); the "non-territorial" category refers to all data outside those coordinates (Areas 15-25 on Figure 1B). This is a departure from years past when data were separated into inshore / offshore components. In 1990, the statistical reporting map was revised to reflect the territorial / non-territorial breakdown because it reflects a better estimate of territorial landings, it takes care of the confusing issue of an "offshore" permit holder fishing in "inshore" waters as in years past, and it conforms to the National Marine Fisheries Service's statistical reporting areas. Figures 1A and 1B show the new areas as defined for 1990.

Figure 1A. 1990 Massachusetts Lobster Fishery; Statistical Reporting Map Showing Territorial Waters and Outlying Areas

(See page 4 for descriptions of territorial areas)

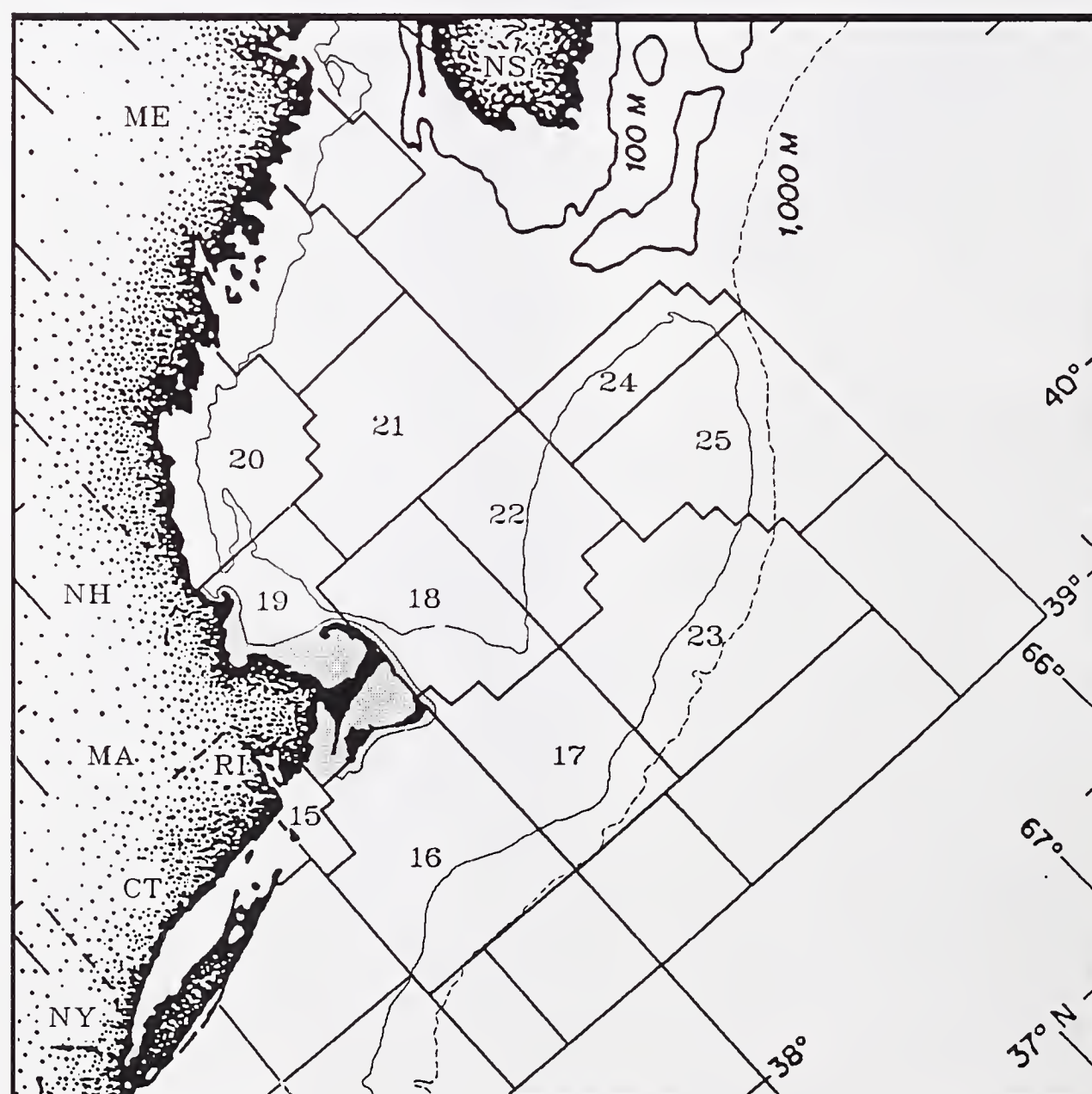


Description of Boundaries for Territorial Areas in Figure 1A

Between Areas	Boundaries	Between Areas	Boundaries
1 & 2	Castle Neck, Ipswich	11 & 12	70 Degree Longitude Line
2 & 3	Goldsmith Point, Manchester	12 & 13	41 Degree 20 Minute Latitude Line
3 & 4	Red Rock, Lynn	13 & 14	Elizabeth Islands and Sow & Pigs Reef to
4 & 5	Tobias Ledge (Spindle), Scituate		41 Degree 20 Minute Latitude Line
5 & 6	High Pines Ledge, Plymouth	14 & 15	70 Degree 10 Minute Longitude Line
6 & 7	Scussett Beach, Sandwich		
(5,6,7) & 8	120 Foot Line		
8 & 9	70 Degree Longitude Line		
9 & 10	70 Degree Longitude Line		
9 & 11	41 Degree 20 Minute Latitude Line		
10 & 12	Wasque Point, M.V. to Muskeget Island, Nantucket		
10 & 13	Waquoit Bay, Falmouth to Cape Poge, M.V.		

Areas 1 - 14 = Territorial Waters
Parts of Area 10 are Federal waters, but are managed by DMF.

Figure 1B. 1990 Massachusetts Lobster Fishery; Statistical Reporting Map Showing Offshore Areas (which correspond to NMFS Statistical Areas)



Below is a brief definition of each lobster license type, both commercial and non-commercial, describing their entitlements.

Coastal Commercial: Allows the holder to harvest lobster anywhere, most importantly inside territorial waters.

Offshore Commercial: Allows the holder to harvest lobster outside territorial waters only.

Seasonal Commercial: Allows the holder, if he or she is a student to harvest lobster anywhere, but with a maximum of 25 traps and only during the months June - September.

Non-commercial: Allows the holder to harvest lobster anywhere but with a maximum of only 10 traps (if fishing traps) and cannot sell catch.

In all cases, the legal minimum size of a harvestable lobster was 3 1/4 inches in 1990. As promulgated by the New England Fishery Management Council in cooperation with lobster producing states in New England and the Mid-Atlantic, 1990 was the "off-year" of a 5-year program to increase the minimum legal size from 3 3/16 to 3 5/16 inches by January of 1992 through four 1/32 inch increases.

Tables presenting number of fishermen, number of pots fished, number and value of boats used in the fishery and total landings statewide, by county and license type, and for each city and town were prepared using the catch reports submitted by commercial fishermen. In keeping with Division policy, some of the data are masked or combined to protect the confidentiality of the individual submitting the report. Data referring to the number of fishermen, number and value of gear, and number and value of boats are presented by the home port of the licensee filing the report. Pounds of lobster harvested are presented by the port of landing reported by the fishermen.

Vessel and SCUBA gear values were calculated on the basis of the fishermen's estimate of its present value and the percentage of its use specifically for lobstering. Average values were used when the information was omitted from an individual report. When fishermen reported the number of lobsters taken, rather than poundage, a conversion factor of 1.27 pounds per lobster was used to calculate poundage figures. This figure is based on information collected by the Division's Commercial Lobster Investigations Project. For information on biological (average carapace length, sex ratios, percent of egg-bearing lobster in catch etc.) and other parameters (mortality, exploitation and catch per unit of effort rates) contact this Project in Sandwich, MA at (508) 888-1155.

Where tables refer to county, the reader is referred to Figure 10.

ISSUED LICENSES AND REPORTING STATUS

Table 1 lists the number of licenses, both commercial and recreational, issued in 1990, the total value in terms of fees and the number that reported catching lobster. There were 2,638 commercial lobster licenses issued during 1990: 1,782 coastal, 774 offshore and 82 seasonal. Non-commercial licenses issued totaled 12,343, a breakdown of their reporting status and landings can be found in Table 6.

As of July 23, 1990, a total of 161 licensed commercial lobstermen (6 percent) failed to file a catch report with the Division. Of the 2,371 commercial fishermen who reported, 633 or 25 percent claimed they did not catch any lobster during 1990. If one looks at the coastal license category in Table 2, they will see a 4 percent drop in the number of fishermen catching lobster from 1989 or a 10 percent drop over the last five years. It is interesting to note the slow decline of coastal licenses issued over the last three years as a result of the moratorium placed on the issuance of new license set in 1988.

The number of offshore licensees catching lobster over the last five years has increased considerably, up 42 percent with very little change in the number of licenses issued. This is most probably due to the change in wording on the catch report in 1988 which asked if they actually caught lobster rather than if they fished, or directed their efforts, for lobster. Student commercial licenses continue to decline in number with a 61 percent drop in number issued between 1986 and 1990.

Table 1. 1990 Massachusetts Lobster Fishery; Reporting Status of Licenses Issued

<u>License Type (Fee)</u>	<u>Licenses Issued</u>	<u>Licensing Revenue</u>	<u>Reported "Catching Lobster"</u>		<u>Reported "No Lobster Catch"</u>		<u>Not Reporting</u>	
Coastal Commercial (\$ 260)	1,727	\$449,020	1,281	74%	420	24%	26	2%
Offshore Commercial (\$ 260)	738	\$191,880	417	57%	207	28%	114	15%
Seasonal (Student) Commercial (\$ 65)	67	\$4,355	40	60%	6	9%	21	31%
Non-Commercial (\$ 40)	12,343	\$493,720	7,562	61%	1,528	12%	3,253	26%
Total	14,875	\$1,138,975	9,300	63%	2,161	15%	3,414	23%

Table 2. Massachusetts Commercial Lobster Fishery; Selected Licensing Information, 1986 – 1990

	1986	1987	1988	1989	1990	Percent Five Year Change
<u>Coastal Licenses</u>						
Issued	1,803	1,877	1,832	1,782	1,727	-4.22
% Change		4.10	-2.40	-2.73	-3.09	
"Caught Lobster"	1,418	1,434	1,436	1,333	1,281	-9.66
% Change		1.13	0.14	-7.17	-3.90	
"Did Not Catch Lobster"	359	409	362	422	420	16.99
% Change		13.93	-11.49	16.57	-0.47	
Not Reporting	26	34	34	27	26	0.00
% Change		30.77	0	-20.59	-3.70	
Percent Not Reporting	1	2	2	2	2	
<u>Offshore Licenses</u>						
Issued	711	764	795	774	738	3.80
% Change		7.45	4.06	-2.64	-4.65	
"Caught Lobster"	294	291	323	339	417	41.84
% Change		-1.02	11.00	4.95	23.01	
"Did Not Catch Lobster"	270	319	347	338	207	-23.33
% Change		18.15	8.78	-2.59	-38.76	
Not Reporting	147	161	125	97	114	-22.45
% Change		9.52	-22.36	-22.40	17.53	
Percent Not Reporting	21	21	16	13	15	
<u>Seasonal (Student) Licenses</u>						
Issued	171	131	99	82	67	-60.82
% Change		-23.39	-24.43	-17.17	-18.29	
"Caught Lobster"	88	60	53	49	40	-54.55
% Change		-31.82	-11.67	-7.55	-18.37	
"Did Not Catch Lobster"	13	9	15	13	6	-53.85
% Change		-30.77	66.67	-13.33	-53.85	
Not Reporting	70	63	31	20	21	-70.00
% Change		-10.00	-50.79	-35.48	5.00	
Percent Not Reporting	41	48	31	24	31	

LANDINGS AND VALUE

An unprecedented 16,567,377 pounds of lobster were reported landed by commercial lobstermen in Massachusetts, a 13.5 percent increase over 1989. Based on a price of \$2.46 per pound, however, the commercial catch was valued at \$40,755,747, a 1 percent decrease. Figure 2 shows the weighted ex-vessel price for 1990 as derived from audited lobstermen's records, a significant drop from \$3.14 and \$2.82 paid in 1988 and 1989 respectively. (Weighted price means that each price is weighted by the number of pounds that were paid at that price instead of taking a flat average of all prices). Regional differences in price are typical, where lower prices are usually paid in Boston. Figure 3 shows weighted ex-vessel price over time for the past four years. A best-fit regression line indicates a downward trend over this time period, although it is not statistically significant.

The coastal license holders reported landing 13,876,370 pounds, or 84 percent of the commercial catch. Of the 16,567,377 pounds of lobster landed commercially, 12,260,805 were reported taken within the territorial waters of the Commonwealth. Again, all categories of landings are up over 1989 levels. In fact, the average pounds landed per fishermen (coastal and offshore licenses only) increased 12 percent in 1990. In total pounds of lobster landed, Essex County ranked first, Plymouth County second and Suffolk County third. See Table 3 for a breakdown of pounds landed and number of fishermen by license type and county and Table 4 for a five-year comparison of selected landings and effort statistics. Trap and non-trap landings and the number of traps fished are not available for years prior to 1990, as shown in Table 4, since the statistical reporting map was changed in 1990. These figures are available for the old "inshore / offshore" designations only (see 1989 and prior year's reports).

Gloucester ranked as the number one port in total pounds landed followed by Boston, Sandwich and Plymouth respectively. In total numbers of active commercial fishermen, Essex County ranked first with 642, Plymouth County second with 358 and Bristol County third with 280. Gloucester ranked first in active fishermen followed by New Bedford, Boston and Plymouth, respectively. See Tables 3 and 5, (the shaded areas in Table 5 refer to the top 10 cities in at least one of the two categories: pounds landed or number of fishermen).

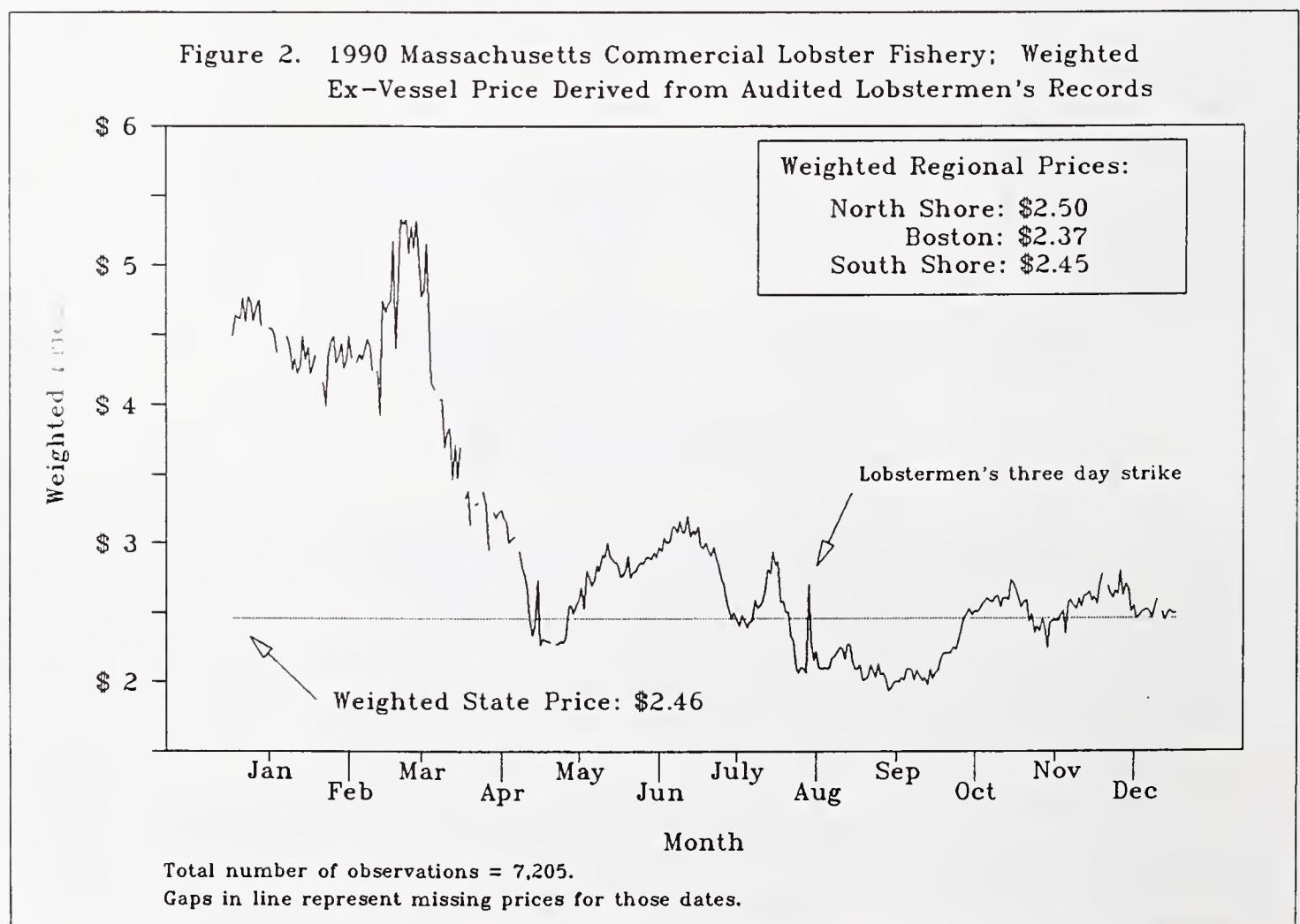


Figure 3. Massachusetts Commercial Lobster Fishery;
Weighted Ex-vessel Price Per Pound, 1987 – 1990.

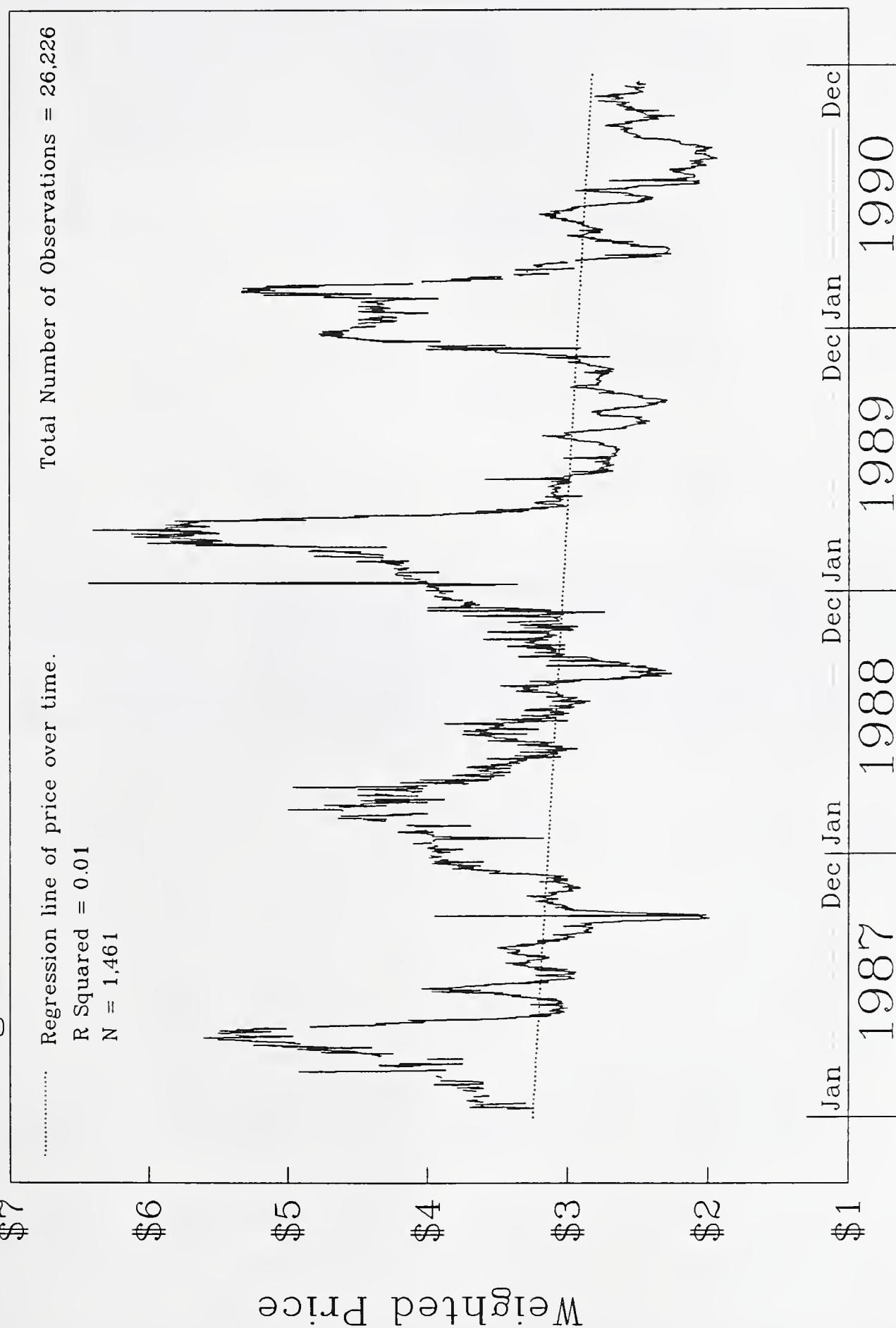


Table 3. 1990 Massachusetts Commercial Lobster Fishery; Number of Fishermen, Harvest (Lbs.) and Value of Harvest

AREA:	TERRITORIAL (Areas 1 - 14)						NON-TERRITORIAL (Areas 15 - 25)						GRAND TOTAL
	COASTAL			SEASONAL			COASTAL		OFFSHORE		TOTAL NON-TERRITORIAL		
LICENSE TYPE:	Diver	Potman	Potman/ Trawl/ Gillnet	Potman	TOTAL TERRITORIAL		Potman	Trawl/ Gillnet	Potman	Trawl/ Gillnet			
GEAR TYPE:													
--- COUNTY ---													
BARNSTABLE													
Fishermen	3	120	9	4	136		8	33	13	33	55	191	
Pounds	3,777	840,881	62,434	708	907,800		197,222	2,717	927,677	41,563	1,169,179	2,076,979	
Value (\$)	9,291	2,068,567	153,588	1,742	2,233,188		485,167	6,684	2,282,085	102,244	2,876,180	5,109,368	
BRISTOL													
Fishermen		70		4	74		20		15	171	206	280	
Pounds		399,098		845	399,943		396,646		831,509	260,258	1,488,413	1,888,356	
Value (\$)	0	981,781	0	2,079	983,860		975,750	0	2,045,511	640,234	3,661,495	4,645,355	
DUKES													
Fishermen		21			21				6		10	31	
Pounds		85,672			85,672		30,991		34,542	3,035	68,567	154,239	
Value (\$)	0	210,753	0	0	210,753		76,237	0	84,973	7,465	168,675	379,428	
ESSEX													
Fishermen		491	12	15	520		18		8	92	122	642	
Pounds	332	5,058,193	25,716	3,101	5,091,909		542,004	5,495	164,919	213,913	926,331	6,018,240	
Value (\$)	817	12,443,155	63,261	7,628	12,526,097		1,333,330	13,518	405,701	526,225	2,278,774	14,804,871	
NANTUCKET													
Fishermen		3			5						2	7	
Pounds		15,423		356	15,779		38,906		6,184	3,986	49,076	64,855	
Value (\$)	0	37,942	0	876	38,817		95,708	0	15,212	9,806	120,726	159,543	
NORFOLK													
Fishermen		57	3		63						0	63	
Pounds	7,706	758,422	41,949	477	808,554		39,488				39,488	848,042	
Value (\$)	18,957	1,865,719	103,195	1,173	1,989,043		97,141	0	0	0	97,141	2,086,184	
PLYMOUTH													
Fishermen	5	280	15	13	317		9		13	17	41	358	
Pounds	2,341	2,791,952	107,498	2,133	2,908,507		296,868	4,256	37,262	27,941	366,327	3,274,833	
Value (\$)	5,759	6,868,201	264,445	5,247	7,154,926		730,295	10,470	91,664	68,735	901,164	8,056,090	
SUFFOLK													
Fishermen		113			115		3		3	26	32	147	
Pounds	14,233	2,028,212	195		2,042,640		68,592		3,735	126,865	199,192	2,241,833	
Value (\$)	35,013	4,989,402	480	0	5,024,895		168,736	0	9,189	312,089	490,013	5,627,000	
STATE TOTAL *													
Fishermen	11	1,155	40	40	1,251		61	7	58	342	468	1,719	
Pounds	28,389	11,977,854	237,792	7,620	12,260,805		1,610,717	12,468	2,005,827	677,560	4,306,572	16,567,377	
Value (\$)	69,837	29,465,520	584,968	18,745	30,161,579		3,962,364	30,671	4,934,335	1,666,798	10,594,168	40,755,747	
OUT OF STATE													
Fishermen					2						17	19	
Pounds		34,096			34,096		174,946		166,897	5,620	347,462	381,558	
Value (\$)	0	83,876	0	0	83,876		430,366	0	410,566	13,825	854,757	938,633	

* Row and column totals may not equal the sum of the rows or columns due to masking of the data.

Value is based on an ex-vessel price of \$2.46, see Figure 2.

**Table 4. Massachusetts Commercial Lobster Fishery;
Selected Landings (Lbs.) and Effort Statistics, 1986 – 90**

	1986	1987	1988	1989	1990	Percent Five Year Change
Total Landings	14,690,452	13,384,566	14,262,798	14,610,078	16,567,377	12.78
Percent Change		-8.89	6.56	2.43	13.40	
Total Traps Fished	427,819	459,360	460,031	453,447	458,280	7.12
Percent Change		7.37	0.15	-1.43	1.07	
Total Value	\$36,873,035	\$40,515,081	\$44,785,186	\$41,200,420	\$40,755,747	10.53
Percent Change		9.88	10.54	-8.00	-1.08	
TERRITORIAL (Inside 3 Miles)						
Landings (see note below)	10,634,231	9,371,224	9,700,058	10,391,098	12,260,805	15.30
Percent Change		-11.88	3.51	7.12	17.99	
Value	\$26,691,920	\$28,366,695	\$30,458,182	\$29,302,896	\$30,161,580	13.00
Percent Change		6.27	7.37	-3.79	2.93	
Trap Landings	*	*	*	*	12,223,266	
Traps Fished	*	*	*	*	385,201	
Non-Trap Landings (Gillnet, Diver)	*	*	*	*	37,539	
NON-TERRITORIAL (Outside 3 Miles)						
Landings (see note below)	4,056,221	4,013,342	4,562,740	4,218,980	4,306,572	6.17
Percent Change		-1.06	13.69	-7.53	2.08	
Value	\$10,181,115	\$12,148,386	\$14,327,004	\$11,897,524	\$10,594,167	4.06
Percent Change		19.32	17.93	-16.96	-10.95	
Trap Landings	*	*	*	*	3,616,544	
Traps Fished	*	*	*	*	73,079	
Non-Trap Landings (Gillnet, Trawler)	*	*	*	*	690,028	
Average Price (\$) / Pound	2.51	3.03	3.14	2.82	2.46	
Percent Change		20.60	3.73	-10.19	-12.77	
Ave. Lbs. / Trap-Haul	0.6907	0.6304	0.6478	0.6601	0.7336	
Percent Change		-8.73	2.76	1.90	11.13	
Ave. Lbs. / Trap	33.10	28.15	29.88	31.00	34.56	
Percent Change		-14.95	6.15	3.75	11.50	
* Figures not available for these years, only inshore/offshore breakdown available. See explanation in text.						
Territorial and non-territorial landings for 1986-1989 were calculated based on the lobsterman's estimate of the percent of his total landings caught from territorial waters.						

Table 5. 1990 Massachusetts Commercial Lobster Fishery; Number of Fishermen and Landings by Homeport. Does Not Include Seasonal Licenses and Their Landings.

TOWN	FISHERMEN NUMBER	RANK	POUNDS TERRITORIAL	POUNDS NON- TERRITORIAL	TOTAL POUNDS	PERCENT	RANK
BARNSTABLE-YARMOUTH	14	25	26,529	361,448	387,977	2.34	18
BEVERLY	43	9	660,118	88,078	748,197	4.52	6
BOSTON	112	3	1,535,001	191,636	1,726,637	10.43	2
BOURNE	9	29	52,308		52,308	0.32	36
CHATHAM	26	17	89,197	88,599	177,796	1.07	24
CHILMARK	16	23	69,218	63,164	132,382	0.80	27
COHASSET	43	9	664,827	783	665,610	4.02	8
DANVERS	15	24	78,275	16,172	94,447	0.57	30
DARTMOUTH	21	21	36,172	15,722	51,894	0.31	37
DENNIS	20	22	76,121		76,121	0.46	31
DUXBURY	5	33	44,257		44,257	0.27	40
ESSEX	11	27	19,276		19,276	0.12	45
FAIRHAVEN	39	10	117,134	523,487	640,621	3.87	9
FALMOUTH-GOSNOLD	13	26	32,220		32,220	0.19	44
GLOUCESTER	220	1	1,152,846	575,926	1,728,772	10.44	1
HARWICH	3	34	31,787	81,728	113,515	0.69	29
HINGHAM	32	16	539,494	13,252	552,746	3.34	12
HULL	34	14	341,741	15,646	357,387	2.16	19
IPSWICH-ROWLEY	22	20	51,856	5	51,861	0.31	38
KINGSTON	7	31	32,516		32,516	0.20	43
LYNN	8	30	247,368	3,007	250,375	1.51	22
MANCHESTER	32	16	256,028	72,607	328,635	1.98	21
MARBLEHEAD	56	7	554,233	43,393	597,626	3.61	11
MARSHFIELD	83	5	609,048	157,571	766,618	4.63	5
MATTAPOISETT	13	26	45,967	13,983	59,950	0.36	33
NAHANT	36	13	606,251	20,280	626,531	3.78	10
NANTUCKET	5	33	15,423	49,076	64,499	0.39	32
NEW BEDFORD	178	2	128,366	353,388	481,755	2.91	15
NEWBURYPORT-NEWBURY	26	17	31,332	24,448	55,781	0.34	35
ORLEANS-EASTHAM	24	19	156,208	2,880	159,088	0.96	26
PLYMOUTH	106	4	833,153	30,196	863,348	5.21	4
PROVINCETOWN	37	12	136,282	32,128	168,410	1.02	25
QUINCY-BRAINTREE	11	27	55,556	3,120	58,676	0.35	34
REVERE-CHELSEA-MEDFORD	10	28	328,879	7,556	336,436	2.03	20
ROCKPORT	60	6	428,316	22,669	450,985	2.72	17
SALEM	14	25	26,058	10,166	36,223	0.22	41
SALISBURY	6	32	17,647	1,211	18,858	0.11	46
SANDWICH	34	14	279,095	602,396	881,491	5.32	3
SAUGUS	45	8	522,325	7,962	530,286	3.20	14
SCITUATE	56	7	422,474	123,407	545,881	3.30	13
SWAMPSCOTT	33	15	436,880	40,407	477,287	2.88	16
TISBURY-OAK BLUFFS-EDGARTOWN	13	26	11,262	5,403	16,665	0.10	47
TRURO-WELLFLEET	9	29	32,537		32,537	0.20	42
WAREHAM-MARION	9	29	37,725	12,273	49,997	0.30	39
WESTPORT-FALL RIVER-BERKLEY	38	11	117,425	595,815	713,241	4.31	7
WEYMOUTH	7	31	87,695	35,585	123,279	0.74	28
WINTHROP	25	18	178,760		178,760	1.08	23
STATEWIDE TOTAL	1,679		12,253,185	4,306,572	16,559,757	100.00	
OUT OF STATE	19		34,096	347,462	381,558		

Shaded areas refer to towns which rank in top 10 for one or both of the categories.

Recreational statistics are shown in Table 6. Licenses issued in 1990 totalled 12,343, down slightly from 1989, with 7,562, or 61 percent, reporting that they fished for lobster. In general, reporting rates, and landings did not change much from 1989. Landings amounted to 416,952 pounds, or only 2.5 percent of commercial landings. Often there are concerns by the commercial sector that recreational fishermen have a detrimental effect on the resource. This obviously is not the case, as these figures illustrate. It should be noted that those individuals who did not report, did not renew their recreational license for 1991 as well. With the number of licenses issued from 1989 to 1990 virtually unchanged, one quarter of the recreational fishery has turned over in the last two years. Historically, this kind of turn-over rate is not unusual.

Table 6. 1990 Massachusetts Recreational Lobster Fishery; License Status and Harvest Information

License Type:	Method				Total	Percent
	Diver	Diver/Pot	Potman	Unknown		
1) Number of Licenses Issued in 1990	4,758	3,567	4,018	0	12,343	
2) Number That Reported	3,336	2,728	3,026	0	9,090	73.64%
a) Total Number That Fished	2,768	2,278	2,516	0	7,562	61.27%
b) Total Number That Did Not Fish	568	450	510	0	1,528	12.38%
3) Number That Did Not Report	1,499	872	1,089	0	3,253	26.36%
4) Number of Lobsters Reported Landed	62,165	95,388	170,756	0	328,309	Percent Change from 1989
Pounds of Lobsters (Calculated)*	78,950	121,143	216,860	0	416,952	1.80%
5) Number Pots Fished		7,600	19,721	0	27,321	-0.49%
6) Number of Hours Diving	48,324	35,075		0	83,399	5.77%

* Based on 1.27 Pounds per Lobster.

Territorial landings by commercial fishermen were concentrated during the months July through November when 84 percent of the yearly harvest was landed. This is a typical scenario from year to year, where catch increases sometime in mid to late July and peaks in August and September. Water temperatures rise during this time inducing growth and subsequent recruitment of previously sub-legal lobsters into the legal size category. See Table 7 and Figure 4.

The greatest harvest of lobster taken from territorial waters was from the Boston Harbor vicinity (including outlying areas out to the territorial line or Area 4 on Figure 1A), where approximately 43% of the state's territorial harvest was caught. This far outweighs any of the other designated areas in terms of landings. It is difficult to determine which reporting

Table 7. 1990 Massachusetts Commercial Lobster Fishery; Percent Monthly Territorial Harvest for Each License Type

Month	Coastal	Seasonal
January	1.10	
February	0.57	
March	0.87	
April	1.41	
May	3.29	
June	5.06	18.20
July	13.46	33.95
August	21.67	34.92
September	21.64	12.93
October	16.52	
November	10.33	
December	4.08	
Total	100.00	100.00

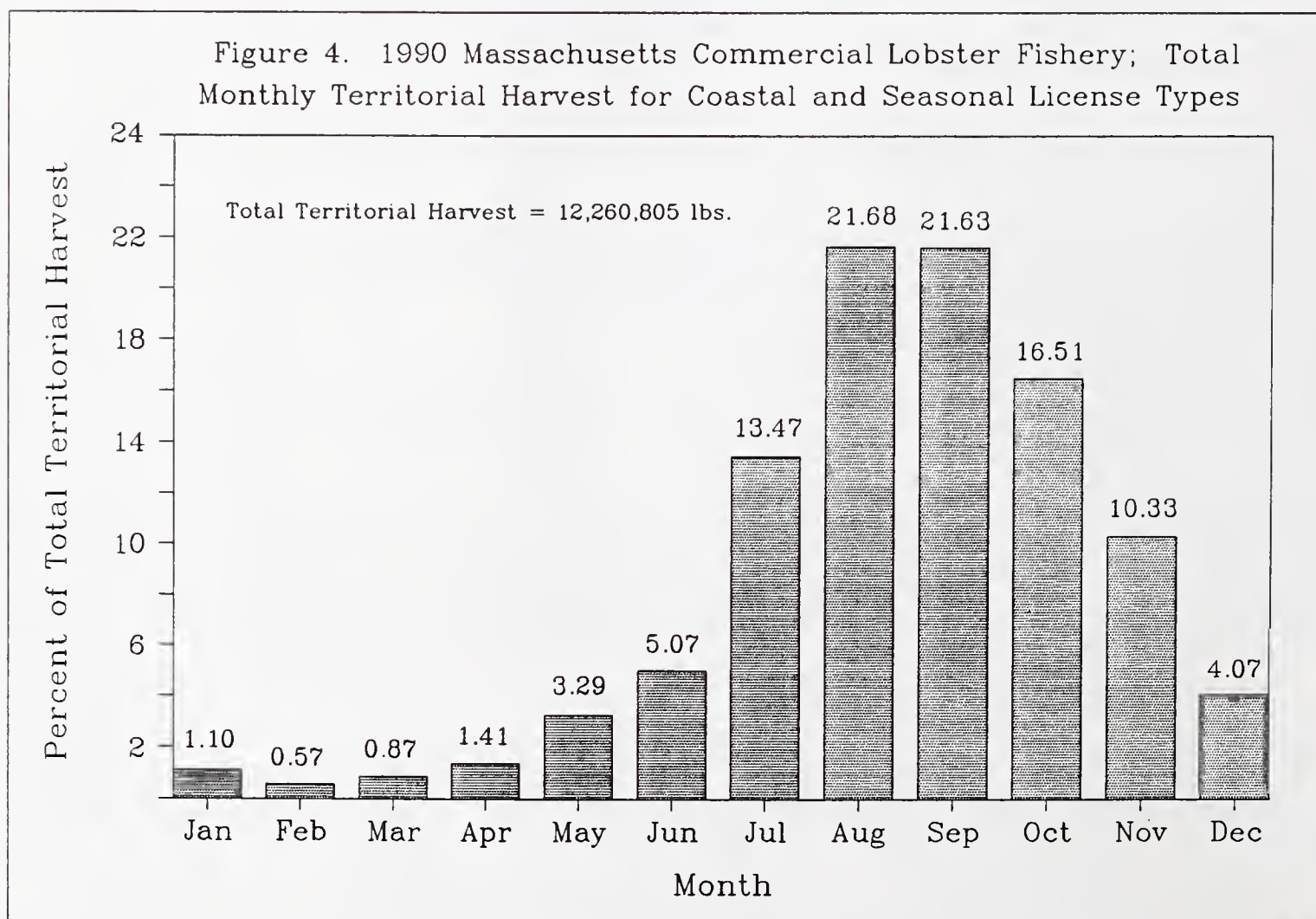


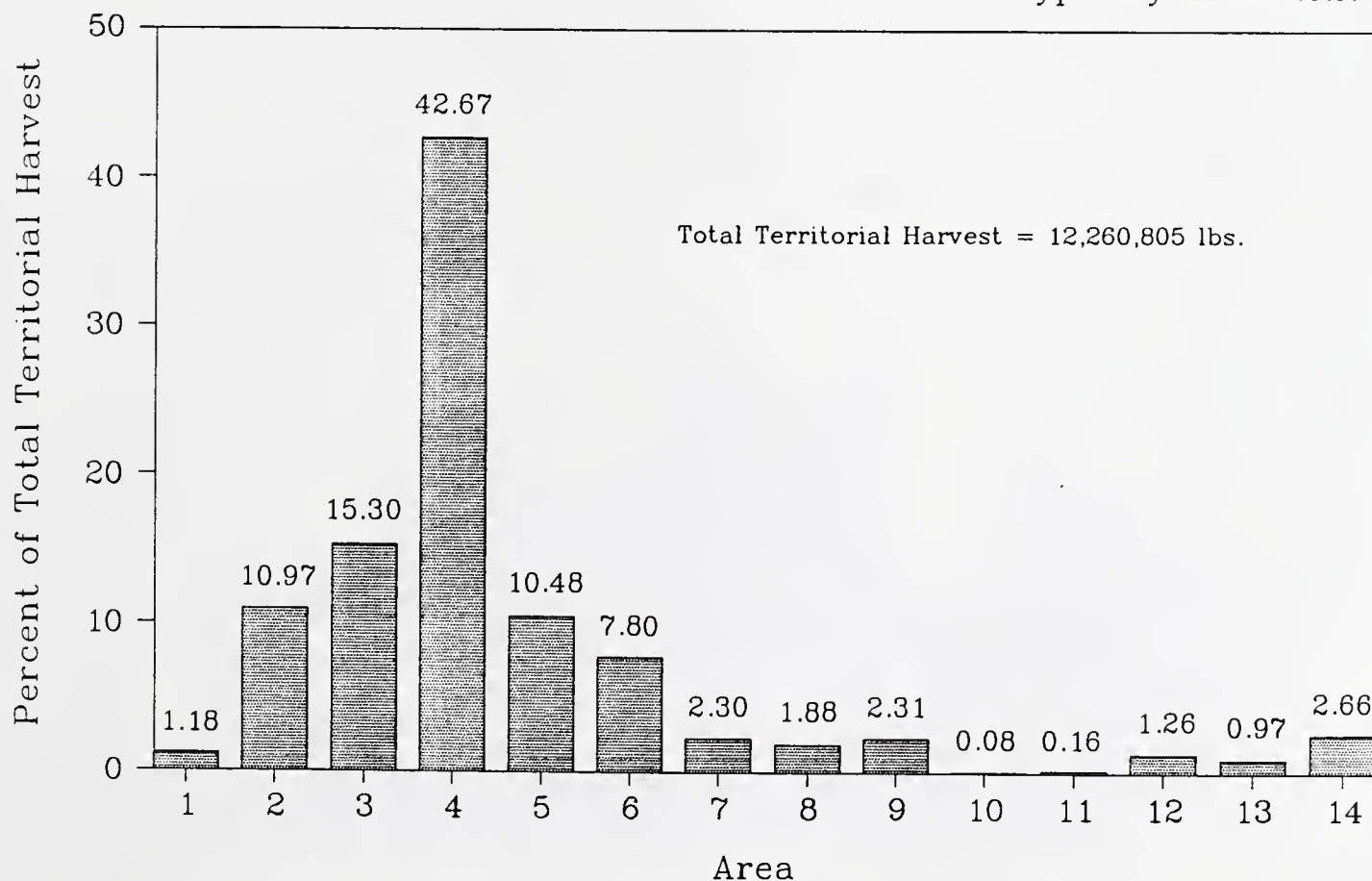
Table 8. 1990 Massachusetts Commercial Lobster Fishery; Percent Territorial Harvest by Area Fished for Each License Type

Area Fished	Coastal	Seasonal
1	1.18	0.00
2	10.95	25.30
3	15.30	8.34
4	42.69	14.93
5	10.49	2.76
6	7.80	18.95
7	2.30	3.10
8	1.88	1.31
9	2.31	0.00
10	0.07	8.28
11	0.16	0.00
12	1.26	0.00
13	0.97	1.27
14	2.65	15.76
Total	100.00	100.00

areas (as defined by Figure 1A) contributed the most to the increase in landings over 1989, since the reporting map changed for 1990. See Figure 1A for the map of fishing areas, and Figure 5 and Table 8 for a complete breakdown by area for each license type and month.

Offshore license landings are not shown in Figures 4 and 5 because license holders of this type cannot harvest lobsters within territorial waters. However, landings are generally more spread out over the year for these individuals compared to the coastal license holders, with most of the harvest coming in the months July to January. This reflects both the offshore potmen whose catch peaks much like the coastal potmen, and the draggers whose catch peaks in the winter months.

Figure 5. 1990 Massachusetts Commercial Lobster Fishery; Total Territorial Harvest for Coastal and Seasonal License Types by Area Fished



CATCH RATES

The average catch per trap haul for coastal lobstermen was .6664 pounds, a slight increase over 1989. For traps fished one set-over day the average was .3352; for those fished two days .6144; for three days .6802; and for four days .6627. See Figure 6 for catch effort by set-over day.

Figures 7 and 8 reflect the average catch per trap haul - set-over day for area fished and month, where set-over day is factored into the effort. The average catch per trap haul - set-over day for 1990 was .2270, a slight increase over 1989. Monthly figures mimic landings, and figures for each statistical reporting area show areas 4, 7, 8 and 9 above the average.

Overall these figures should be categorized as "estimates" since, in many cases, fishermen will estimate the number of traps hauled per trip for each month. If a fisherman leaves this information blank, or the combination of maximum traps, set-over days, average traps hauled per trip and number of trips per month is out of range for a particular month, the information is not factored into the analysis.

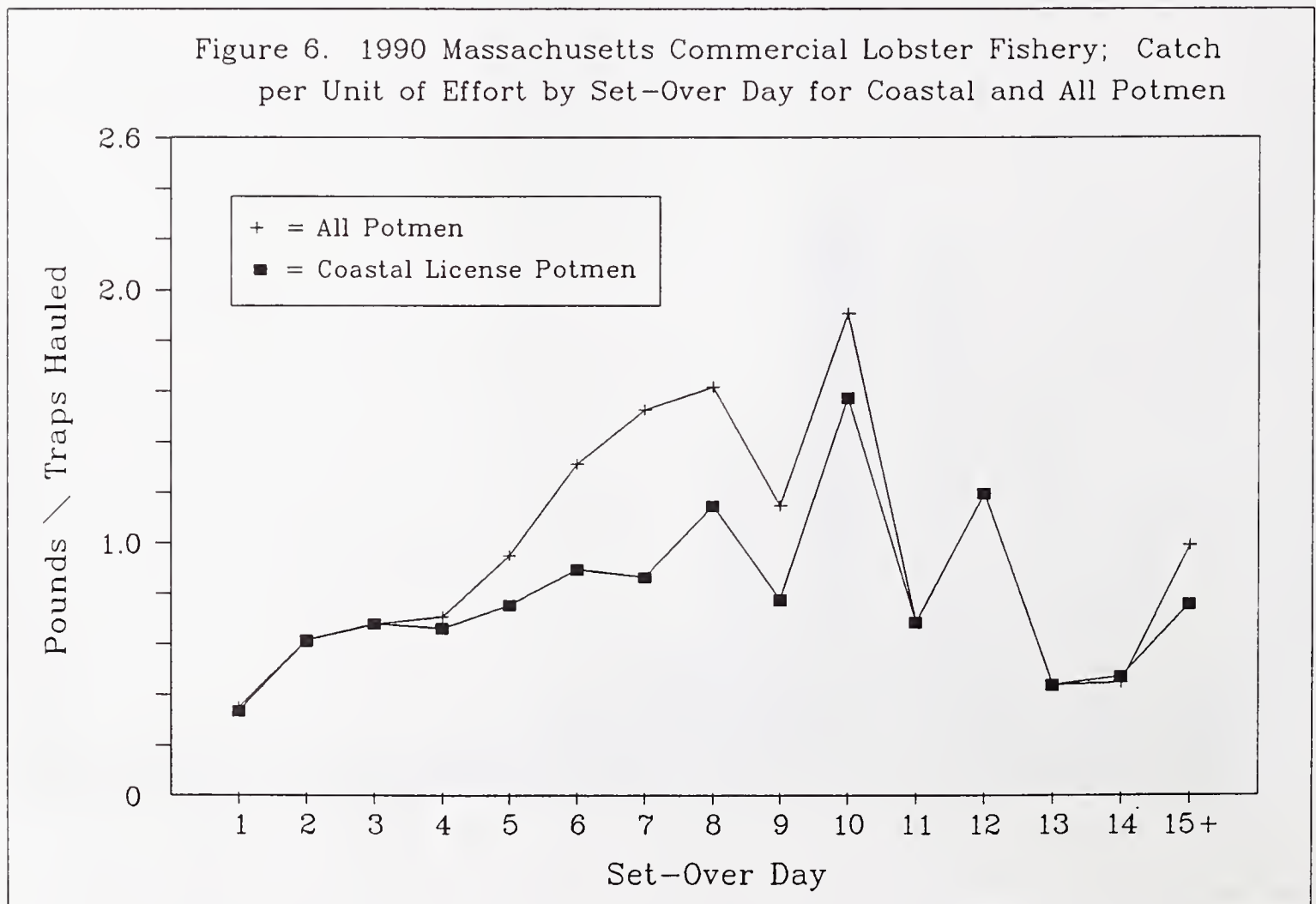


Figure 7. 1990 Massachusetts Commercial Lobster Fishery;
Catch Per Unit of Effort for Both Coastal and All Potmen by Month

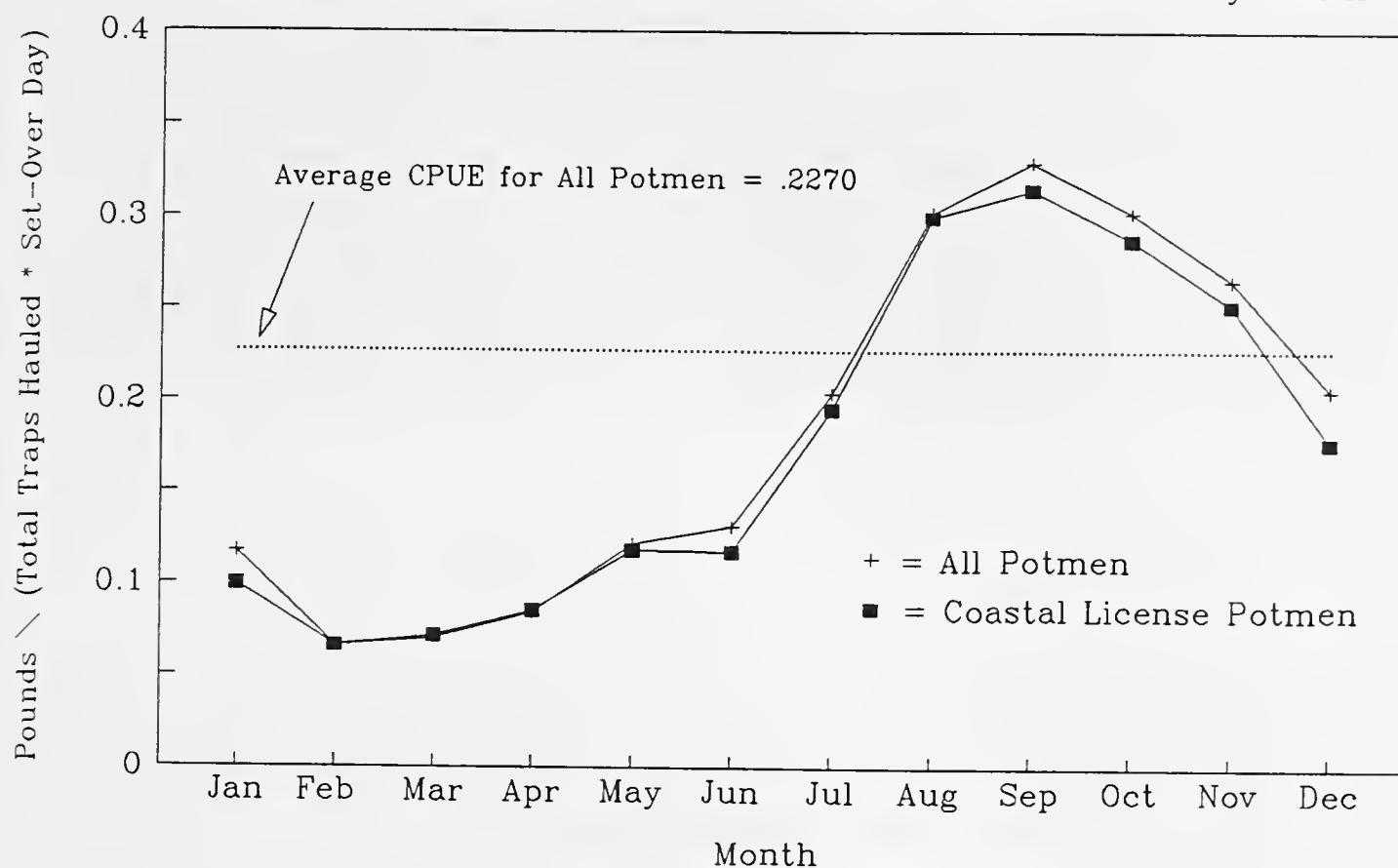
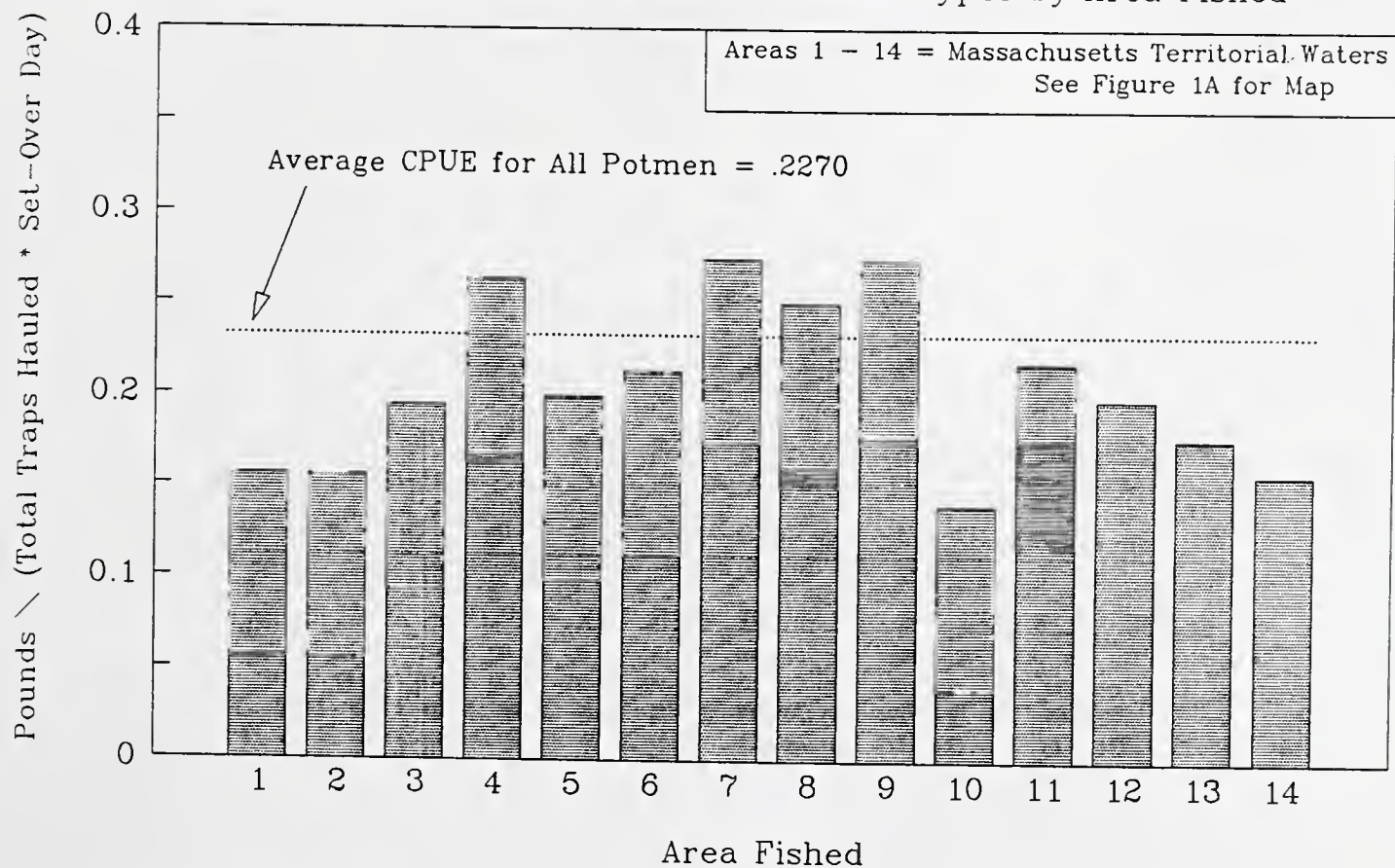


Figure 8. 1990 Massachusetts Commercial Lobster Fishery;
Catch Per Unit of Effort for All License Types by Area Fished



FISHING GEAR, VESSELS AND VALUE

In the commercial fishery, traps were valued at \$21,502,173, diving gear at \$63,940, and power and non-power boats at \$54,177,672, yielding a total gear value of \$75,743,785. Combined with the ex-vessel value of lobster sold, \$40,755,747, gives a total fishery value of \$116,499,532. See Tables 9, 10 and 11.

Overall, 69% of the traps fished in the commercial fishery were wire framed, with 30% being wooden framed and less than 1% categorized as "other". This supports a continuing trend of increasing wire traps employed in the fishery. Average value (including warp and buoy) ranged anywhere from \$28.47 to \$73.37, with an overall average of \$46.73. See Table 9.

Table 9. 1990 Massachusetts Commercial Lobster Fishery; Trap Types Fished and Value for Each License Type					
	Coastal	Offshore	Seasonal	Total Trap Type	Percent of Total
Wooden Framed Traps	127,219	12,611	132	139,962	30.42 %
Value	\$5,717,354	\$925,250	\$3,758	\$6,646,361	
Value/Trap	\$44.94	\$73.37	\$28.47	\$47.49	
Wire Framed Traps	298,378	20,009	651	319,038	69.33 %
Value	\$13,419,761	\$1,365,277	\$22,619	\$14,807,657	
Value/Trap	\$44.98	\$68.23	\$34.74	\$46.41	
Other Trap Types	1,165			1,165	0.25 %
Value	\$48,155			\$48,155	
Value/Trap	\$41.33			\$41.33	
Total for License Type	426,762	32,620	783	460,165	
Value	\$19,185,270	\$2,290,526	\$26,377	\$21,502,173	
Value/Trap	\$44.96	\$70.22	\$33.69	\$46.73	

Value of trap includes warp and buoy. These figures include out-of-state fishermen.

Table 10. 1990 Massachusetts Commercial Lobster Fishery; Number of Fishing Vessels and Pots Fished

AREA:		TERRITORIAL (Areas 1-14)					NON-TERRITORIAL (Areas 15 - 25)					GRAND TOTAL
LICENSE TYPE:	----- COASTAL -----					--- COASTAL ---					TOTAL NON-TERRITORIAL	
GEAR TYPE:	Diver	Potman	Potman/ Diver	Trawl/ Gillnet	SEASONAL (Student) Potman	TOTAL TERRITORIAL	Potman	Trawl/ Gillnet	--- OFFSHORE --- Potman	Trawl/ Gillnet		
-- COUNTY --												
BARNSTABLE												
Pots Fished		29,549	2,257		70	31,876	5,402		10,775		16,177	
Power Boat	4	123	9		3	139	8	1	13	33	55	
Non Power Boat		8	1			9				1	1	
BRISTOL												
Pots Fished		14,693			100	14,793	11,710		11,423		23,133	
Power Boat		69			3	72	20		16	167	203	
Non Power Boat		1				1					0	
DUKES												
Pots Fished		3,344				3,344	1,098		1,640		2,738	
Power Boat		23				23	2		6	1	9	
Non Power Boat		1				1	1				1	
ESSEX												
Pots Fished		158,404	1,246		287	159,937	12,641		2,638		15,279	
Power Boat	1	492	14	1	14	522	18	4	8	89	119	
Non Power Boat		41				41					0	
NANTUCKET												
Pots Fished		438			50	488	800				800	
Power Boat		4			2	6	1			1	2	
Non Power Boat						0					0	
NORFOLK												
Pots Fished		19,971	970		43	20,984	889				889	
Power Boat	1	59	3		2	65					0	
Non Power Boat		7				7					0	
PLYMOUTH												
Pots Fished		92,641	3,313		233	96,187	6,580		2,744		9,324	
Power Boat	4	280	14	4	12	314	10	2	11	17	40	
Non Power Boat		40	3			43	1	1	1		3	
SUFFOLK												
Pots Fished		57,521	70			57,591	2,840		1,900		4,740	
Power Boat	1	111	1			113	4		3	26	33	
Non Power Boat		5				5					0	
STATE TOTAL												
Pots Fished		376,562	7,856		783	385,201	41,959	0	31,120	0	73,079	
Power Boat	11	1,161	41	5	36	1,254	63	7	57	334	461	
Non Power Boat	0	103	4	0	0	107	2	1	1	1	5	
OUT OF STATE												
Pots Fished		385				385			1,500		1,500	
Power Boat		2				2			1	16	17	
Non Power Boat		1				1					0	

Table 11. 1990 Massachusetts Commercial Lobster Fishery; Value of Fishing Vessels and Diving Gear

AREA:	TERRITORIAL (Areas 1-14)					NON-TERRITORIAL (Areas 15 - 25)					GRAND TOTAL
	----- COASTAL -----				SEASONAL (Student)	--- COASTAL ---				TOTAL NON-TERRITORIAL	
LICENSE TYPE:	Diver	Potman	Potman/ Diver	Trawl/ Gillnet	Potman	Potman	Potman	Trawl/ Gillnet	Potman	Trawl/ Gillnet	
GEAR TYPE:											
--- COUNTY ---											
BARNSTABLE											
Diving Gear	9,000		6,792								15,792
Power Boat	33,000	2,334,827	317,400		19,425	1,068,750	2,390,575	328,864			6,494,841
Non Power Boat		1,783	484					100			2,367
BRISTOL											
Diving Gear											0
Power Boat		1,598,248			6,625	1,554,338	2,083,113	4,681,786			9,924,109
Non Power Boat		250									250
DUKES											
Diving Gear											0
Power Boat		784,350				155,000	204,125	2,000			1,145,475
Non Power Boat		200				2,000					2,200
ESSEX											
Diving Gear	2,000		9,655								11,655
Power Boat	50,000	13,921,953	167,470	12,500	26,470	1,124,490	770,952	718,033			16,795,367
Non Power Boat		14,281									14,281
NANTUCKET											
Diving Gear											0
Power Boat		43,500			32,692	90,000		25,000			191,192
Non Power Boat											0
NORFOLK											
Diving Gear	2,500		1,635								4,135
Power Boat	26,000	1,983,436	103,000		13,900	486,538	909,350	133,913			2,126,336
Non Power Boat		2,900				1,500	2,500				2,900
PLYMOUTH											
Diving Gear	10,555		18,303								28,858
Power Boat	79,200	8,913,600	787,200	56,300	48,100	486,538	909,350	133,913			11,421,201
Non Power Boat		26,895	357			1,500	2,500				31,253
SUFFOLK											
Diving Gear	3,000		500								3,500
Power Boat	35,000	4,682,200	2,500			252,500	500,000	552,300			6,024,500
Non Power Boat		1,400									1,400
STATE TOTAL											
Diving Gear	27,055	0	36,885		0	0	0	0	0	0	63,940
Power Boat	223,200	34,262,113	1,377,570	68,800	147,212	4,731,616	6,858,114	6,441,897			54,123,022
Non Power Boat	0	47,708	841	0	0	3,500	2,500	100			54,650
OUT OF STATE											
Diving Gear											0
Power Boat		38,000					250,000	287,476			575,476
Non Power Boat		200									200

VALIDITY OF DATA

Each year 150 coastal license holders are selected and audited for the records they used to complete the catch portion of their catch report. The Division does this to assess the amount of error involved in the reporting process. Selection is done randomly except when fishermen fail an audit. In these cases, they are audited again the following year. The audit was first instituted in 1977 for the 1976 catch reports. Over the last five years the lobstermen selected for audit reported landing 6,105,853 pounds. The audit of their records revealed a harvest of 6,041,841 pounds or a difference of 1.05 percent.

Last year the fishermen selected for audit reported harvesting 1,681,685 pounds of lobster on their 1990 catch reports. The audit of their actual records showed total landings of 1,660,164 pounds, a difference of 21,521 pounds or 1.28 percent. Nine of the randomly selected fishermen have yet to respond to the audit request. Figure 9 shows the distribution of the percent difference between the selected fishermen's reported catch and their audited records. In general, reported landings are very well documented by dealer receipts and/or personal records, especially by the so-called "high-liners" in the fishery. Most of the lobstermen have had licenses for several years and know what is required in terms of reporting their fishing activities in addition to the value of reporting accurately in the development of management plans. They also know that their reported information is kept strictly confidential and published only in aggregate form. These factors all contribute to a fairly conscientious and responsible reporting constituency.

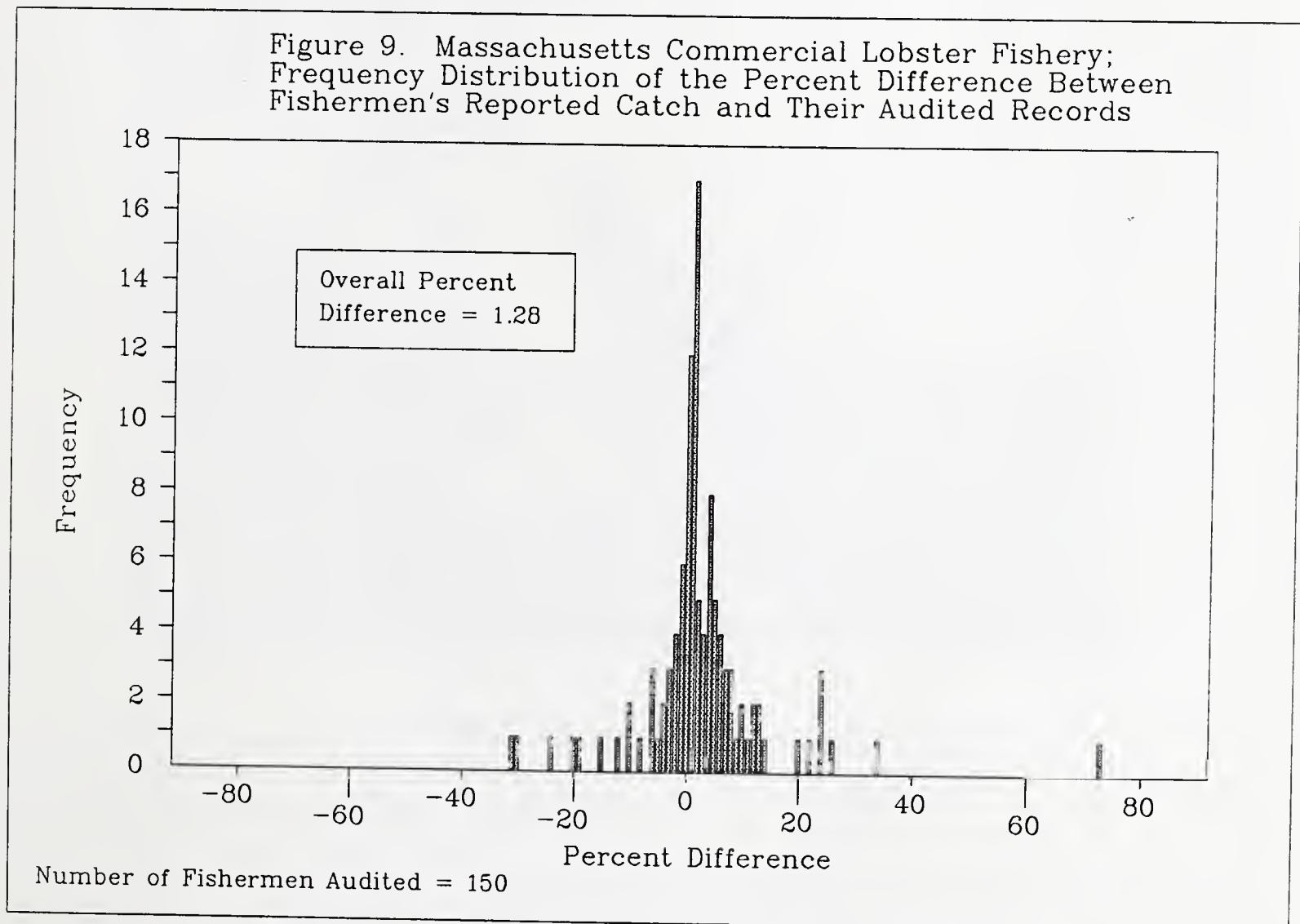
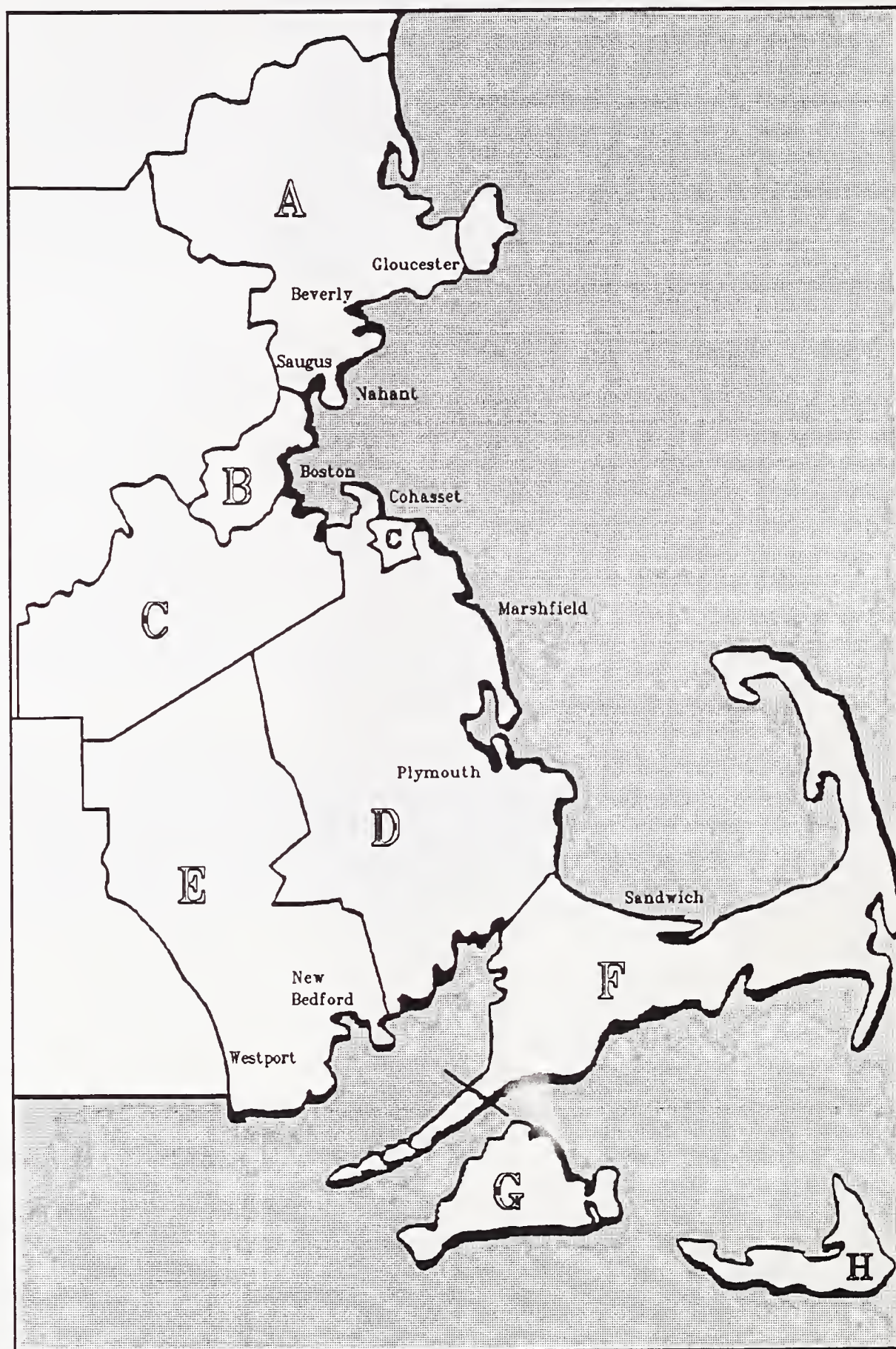


Figure 10. Coastal Map of Massachusetts
Showing Statistical Reporting Areas (Counties)



A. Essex

C. Norfolk

E. Bristol

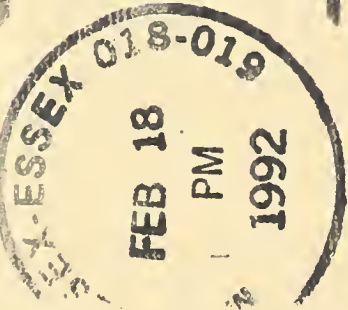
G. Dukes

B. Suffolk

D. Plymouth

F. Barnstable

H. Nantucket



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